Modeling shows tracking app critical to containing COVID second wave

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Independent modeling published today projects a second wave of COVID-19 in Australia if social distancing and testing decline further—but new cases could be slashed by over 50% if enough people

use the COVIDSafe app and remaining issues with it are resolved.

While social distancing and high rates of testing remain the best ways to limit the spread, the Sax Institute researchers behind the modeling say the smartphone app could be "insurance" against reignition of the pandemic.

The modeling, published in the peer-reviewed journal *Public Health Research & Practice*, uses evidence on factors such as the speed and characteristics of the virus's spread to project likely consequences for case numbers under various scenarios.

The "baseline" scenario assumes a 50% monthly decline in social distancing and a 5% monthly drop in testing intensity going forward—the authors' estimate of what was happening in May when the paper was written. Their model finds that if 61% of the population in this scenario downloaded the COVIDSafe app onto their phones, the number of infections in a second wave would be 55% lower than if there were no app.

In contrast, the current app uptake level (27%) would have a much smaller effect, resulting in only 24% fewer cases between April and December 2020, the modeling shows.

The research team, led by the Sax Institute's Dr. Danielle Currie, Senior Simulation Modeler, and Dr. Michael Frommer, Senior Adviser, say the potential alternative to an effective response centered on social distancing, testing and contact tracing assisted by the app is that "restrictions on travel and social interaction…may need to be re-introduced".

Dr. Frommer said the model projections should be a clarion call for state and federal governments to redouble their efforts in promoting the app

to the public as well as ensuring that any lingering technical issues are swiftly resolved.

"Testing and social distancing will exert the biggest influence on controlling the curve of the second wave, but the tracking app can play a very important role," he said.

"At our current uptake levels, the app will help with contact tracing, but not significantly. What our work shows is that if we can push uptake to around three-fifths of the population, then it will make a huge difference. It would halve the number of people getting COVID-19 in the event of a second wave and decrease the death rate as well."

The study involved an extensive literature review of the epidemiology of COVID-19, case-finding practices and factors that could affect the uptake of the app, and finally the development of a robust system dynamics model based on the behavior of the virus and its interaction with social, behavioral, and policy factors, using pandemic data from Australia and across the world. The model projects the number of people infected by the virus through to the end of the year. It can be adjusted to account for different rates of testing, intensity of social distancing and uptake of the tracking app.

The modeling study is part of a special themed issue of *Public Health Research & Practice* on the public health lessons we are learning from the COVID pandemic.

In a Perspective article for this issue, Professor Julie Leask and Dr. Claire Hooker, both of the University of Sydney, argue that better risk communication could have reduced the controversy around school closures in Australia due to the pandemic. Events leading up to the school closures created a "near perfect storm of fright factors", they write, escalating people's fear while reducing their trust in those working

to manage the problem. The authors offer a step-by-step guide in managing communications during health crises such as the COVID-19 pandemic.

Two other COVID-related articles in this issue of *Public Health Research & Practice* find:

- A cross-disciplinary effort is needed to understand the prevalence, predictors and consequences of loneliness and social isolation brought on by social distancing during the COVID-19 pandemic
- A global checklist can point the way towards effective communication during a public health crisis such as the COVID-19 pandemic.

In an editorial for this issue, the journal's Editor-in-Chief Professor Don Nutbeam, Principal Senior Adviser at the Sax Institute and Professor of Public Health at the University of Sydney, writes that maintaining the fragile consensus between governments, their scientific advisers, and their citizens is critical to the successful control of the virus.

"The consensus will be sustained by mutual trust built on effective communication—between scientists and policy makers, and between governments and their populations."

More information: Danielle Currie et al. Stemming the flow: how much can the Australian smartphone app help to control COVID-19?, *Public Health Research & Practice* (2020). DOI: 10.17061/phrp3022009

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